



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,635	09/22/2005	Gunter Barrenberg	BM-177PCT	1966
40570	7590	08/03/2010		
Lucas & Mercanti LLP 475 Park Avenue South New York, NY 10016			EXAMINER MERLINO, ALYSON MARIE	
			ART UNIT 3673	PAPER NUMBER
			MAIL DATE 08/03/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,635	<b>Applicant(s)</b> BARRENBURG ET AL.	
	<b>Examiner</b> ALYSON M. MERLINO	<b>Art Unit</b> 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 June 2010 has been entered.

2. The examiner acknowledges applicant's amendments to claims 1-29.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-29 are rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. **In regards to claim 1**, it is unclear how the device includes "cogs" that extend from the comb-shaped body. Specifically, Merriam-Webster defines a cog as "a tooth on the rim of a wheel or gear," and therefore, it is unclear how the device includes cogs, when the device does not include a wheel or gear on the comb-shaped insert and there are no portions of the comb that could be considered as a wheel, gear, or a rotating member. Furthermore, in the remarks, applicant refers to the embodiment of the comb shown in Figure 3 as depicting the "cogs," which brings forth indefiniteness in regards to

Art Unit: 3673

claim 1 because if the limitations of claim 1 are specifically referring to the embodiment in Figure 3, then claim 1 is no longer generic, and some of the dependent claims that refer to specific structure of other comb embodiments, such as those shown in Figures 1.1-2.3b, conflict with claim 1. For examination purposes, the claim will be given a broad interpretation until further clarification from applicant.

6. **In regards to claim 26**, it is unclear to which portions of the tumblers of the device applicant considers as the “additional flanks.” For examination purposes, the claim will be given a broad interpretation until further clarification from applicant.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3673

9. **Claims 1-29 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Demouy (EP 0 879 927 A1) in view of Cook (US-5826451).

10. **In regards to claims 1-4**, Demouy discloses a lock cylinder (Figure 8) including a cylinder housing 15 and a cylinder core 10 rotatably supported in the housing (Figure 8), and a key 18 with a defined longitudinal profile being assigned to the core (Figure 9). Demouy further discloses a group of diametric shafts 14 arranged in a row in the axial direction of the cylinder core (Figure 1), which hold plate-shaped tumblers 12 that include longitudinal edges that are free to slide longitudinally along guide surfaces 42 (apparent from Figures 8 and 9) of the shafts. Demouy discloses that each tumbler has a control edge (see figure below) in correspondence with the longitudinal key (Figure 9), and each control edge being located at a defined height (apparent from profile of key, Figure 1). Demouy further discloses a radial opening 33 in the cylinder core for insertion of an insert 32, with an outer end (end near indicator of reference characters 32, Figure 8) of the insert never projects beyond an external contour of the cylinder core after insertion of the insert in the opening with the insert being fixed in position (apparent from Figures 8 and 9) in the opening, whereas an inner end (end opposite the outer end, closest to tumbler 12, Figure 8) always engages in a cutout 36 in the facing edge of the longitudinal plate edge of each of the tumblers (Figures 1, 7, and 8) during operation of the lock cylinder (apparent from Figure 9). Demouy also discloses that each of the tumblers are secured in the cylinder core (apparent from Figure 1), and that the insert consists of a non-displaceably positioned comb-shaped body (apparent from Figures 3 and 8) with teeth 40 extending from the comb-shaped body, with the tumblers

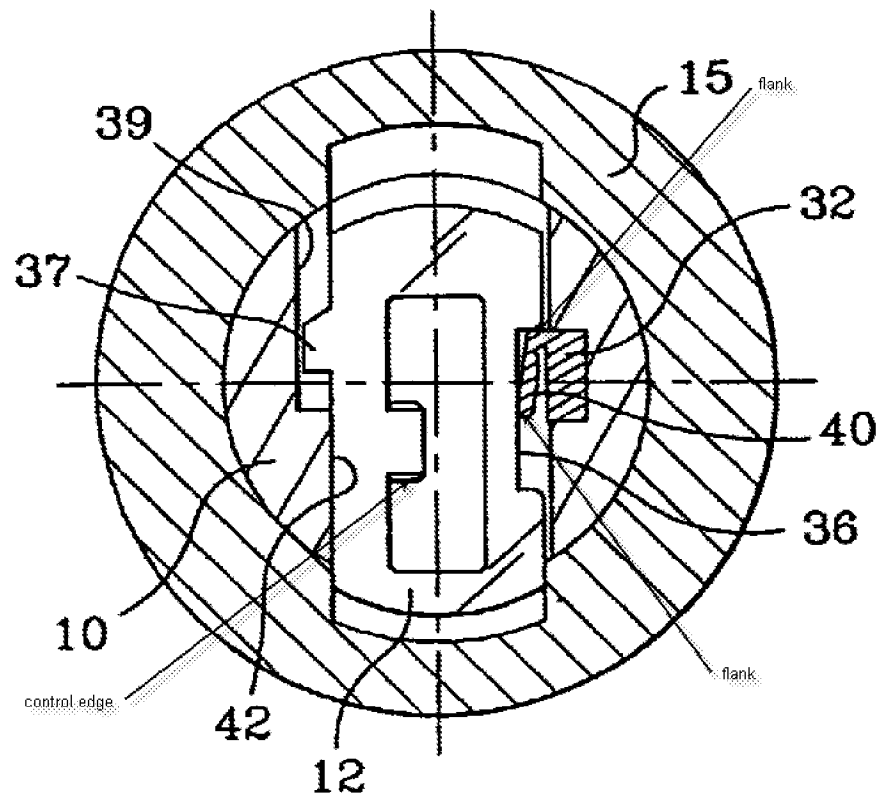
Art Unit: 3673

arranged in a common plane with the teeth (cross-sectional plane shown in Figure 8), with the teeth having inner ends that include a profile with at least one pair of oppositely-facing flanks (see figure below). Demouy discloses that the cutouts in the tumblers have at least one pair of opposing flanks 38 (Figure 7), and the flank pairs and the opposing flank pairs are arranged so that the control edges of at least two tumblers are at the same height (apparent from Figure 1). Demouy further discloses that in a rest position of each of the tumblers, only one of the flanks of a flank pair of the at least one pair of oppositely-facing flanks rests against one of the opposing flanks of the at least one pair of opposing flanks (apparent from Figure 8) and in an actuated position the other flank of the flank pair meets the other opposing flank (apparent that maximum displacement of tumbler 12 upward would have the bottom flank meet the other opposing flank, Figure 9). Demouy fails to disclose that the tumblers are spring-loaded, the at least one pair of opposing flanks of the tumblers are in different positions on each of the tumblers, and the teeth extend perpendicularly from the comb-shaped body. Cook teaches a lock cylinder (Figure 4) having tumblers 14 that are spring-loaded (Col. 22, lines 6-20), with each of the tumblers having a cutout (portion near reference character 14b, Figure 1), and that the cutouts of the tumblers have at least one pair of opposing flanks (portions engaging flanks of insert 16, Figure 4), which are in different positions on the tumblers (apparent from Figures 2 and 3). Cook further teaches a plurality of similar cylinder cores (Figures 4-6) can be used with a set of different combs (combs shown in Figures 5 and 7-13) that are provided with different profiles, with teeth 16a extending perpendicularly to comb-shaped body (apparent from Figures 2-6 and 8).

Art Unit: 3673

Cook further teaches that the teeth of the combs have similar profiles and are arranged in different sequences on the comb (Figures 4-13) where the comb is used with a cylinder core of uniform type (apparent from Figures 4-13). Cook also teaches that the profiles of the teeth on the comb are of similar design (Figures 2 and 3). Since specifying that the tumblers are spring-loaded and the opposing flanks are in different positions on each of the tumblers would not hinder the ability of the tumblers to be moved between a rest position and an actuated position, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the tumblers are spring-loaded and the opposing flanks are in different positions on each of the tumblers in order to enhance the security of the lock cylinder. Moreover, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the teeth extend perpendicularly from the comb-shaped body, as taught by Cook, since a change in the shape of a prior art device is a design consideration within the level of skill of one skilled in the art.

**FIG.8**



11. **In regards to claim 5**, Demouy discloses that the at least one pair of opposing flanks of the cutouts are offset from each other in a vertical direction (apparent from Figure 7), with the control edges of the tumblers capable of being in different positions with respect to one another (apparent from Figure 1).

12. **In regards to claim 6**, Demouy fails to disclose that the inner ends of the teeth of the comb (ends engaging the tumbler, Figure 8) are convexly profiled. Cook teaches that the inner ends of the teeth of the comb are convexly profiled (apparent from Figures 4 and 5) in the radial direction with at least two pairs of flanks (Figures 2-4), which are at different heights (Figures 2 and 3), and that the cutouts in the tumblers are concavely



Art Unit: 3673

profiled (apparent from Figures 4 and 5) in the radial direction and have sections which form at least two pairs of opposing flanks (Figures 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that the inner ends of the teeth of the comb are convexly profiled since a change in the shape of a prior art device is a design consideration within the level of skill of one skilled in the art.

13. **In regards to claim 7**, Cook teaches that the teeth are positioned in similar openings of the cylinder core in two orientations (placement as shown in Figures 1-3).

14. **In regards to claim 9**, Demouy discloses that the maximum point of the tooth profile (near upper flank, see figure above) is positioned in the cylinder core so that it “essentially” lies on a traverse plane (plane extending from side of core with insert towards side with reference character 37, Figure 8) of the cylinder core.

15. **In regards to claim 10**, Cook teaches that a tooth of the comb has two pairs of flanks, an inner pair (flanks on either side closest to reference character 48, Figure 4) which are closer to the transverse plane (Figure 4) and an outer pair (flanks opposite the inner pair, Figure 4) which is further away from the transverse plane (Figure 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify that a tooth 40 of Demouy has two pairs of flanks since a change in the shape of a prior art device is a design consideration within the level of skill of one skilled in the art.

16. **In regards to claims 8 and 11-29**, Demouy in view of Cook teaches that the insert can include many different shaped teeth (as shown in Figures 4-13 of Cook) to

Art Unit: 3673

engage correspondingly shaped cutouts in the tumblers (as shown in Figures 4-13 of Cook). Since Demouy in view of Cook teaches that the insert can be designed to have teeth of varying shapes to engage corresponding cutouts on tumblers of a cylinder core, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the shape of the teeth of the insert and the cutouts of the tumblers in order to allow more variations of the tumbler and insert combination to enhance the security and versatility of the cylinder lock. Furthermore, there is not indication in the claims that the shape of applicant's insert and the corresponding cutouts is critical to the function of the cylinder lock, only that the shape of the teeth of the insert and the cutouts correspond so that they may engage each other. Therefore, since Demouy in view of Cook teaches that the insert and cutouts can vary in shape, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change the corresponding shapes of the insert, as taught by Demouy in view of Cook, since a change in the shape of a prior art device is a design consideration within the skill of the art.

### ***Response to Arguments***

17. Applicant's arguments filed 20 May 2010 have been fully considered but they are not persuasive.

18. The examiner appreciates applicant's amendments to claim 1, and therefore, the rejection of claim 1 under 35 U.S.C. 112, second paragraph, set forth in the previous office action is withdrawn, however, a new rejection of claim 1 under 35 U.S.C. 112, second paragraph, is set forth above.

Art Unit: 3673

19. In regards to applicant's remarks concerning the amendments made to claim 1, as indicated above, the use of the word "cogs" does not provide clarity within claim language since it is clear that the device does not include a wheel or gear having teeth or cogs. Furthermore, applicant notes that the cogs could be referred to as teeth and the radial teeth as tines, and the examiner notes that the claim language should coincide with the terminology used within the specification, such as teeth and flanks. For example, the specification discloses that the comb shaped insert includes teeth 36.3 and 36.3', with these teeth include flanks 37.3a and 38.3a.

20. In regards to the rejection of claim 26 under 35 U.S.C. 112, second paragraph, the examiner would appreciate if applicant could clarify and point out to the structure within the specification and drawings that is considered as the "additional flanks" since the preceding claims already recite that the tumblers include at least one opposing flanks.

21. In regards to applicant's remarks concerning the rejection of the claims as taught by Demouy in view of Cook, applicant is referred to the rejection of claim 1 above under 35 U.S.C. 112, second paragraph. it is unclear how the device includes "cogs" that extend from the comb-shaped body. Specifically, Merriam-Webster defines a cog as "a tooth on the rim of a wheel or gear," and therefore, it is unclear how the device includes cogs, when the device does not include a wheel or gear on the comb-shaped insert and there are no portions of the comb that could be considered as a wheel, gear, or a rotating member. Furthermore, Cook teaches a comb having teeth extending perpendicularly from the comb-shaped body, as shown in Figures 2-6 and 8. Also, in

Art Unit: 3673

regards to applicant's remarks concerning the Demouy reference, the examiner respectfully disagrees, noting that it is clear that the insert or comb is capable of limiting the movement of the tumblers, with Demouy disclosing that the tumblers are arranged in a common cross-sectional plane with the teeth as shown in Figure 8. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALYSON M. MERLINO whose telephone number is (571)272-2219. The examiner can normally be reached on Monday through Friday, 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on (571) 272-6856. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3673

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter M. Cuomo/  
Supervisory Patent Examiner, Art Unit 3673

AM  
July 29, 2010